(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 260 654 A3**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **87113473.0**

(22) Date of filing: **15.09.87**

(51) Int. Cl.4: **G02B 6/34 , H04B 9/00 , H01S 3/00**

(30) Priority: **15.09.86 US 907662**

(43) Date of publication of application:
23.03.88 Bulletin 88/12

(84) Designated Contracting States:
CH DE FR GB IT LI

(88) Date of deferred publication of the search report:
07.02.90 Bulletin 90/06

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(54) Filter tap for optical communication systems.

(57) A filter tap for optical communication systems includes an optical resonant cavity comprising generally parallel, facing dielectric mirrors spaced to permit resonance in a selected band of channels. Optical signals from an input portion of a main trunk line carrying optical signals on a plurality of bands are coupled to one of the mirrors at an end face of the resonant cavity and are coupled from the one mirror to an output portion of the main trunk line with minimal reduction in optical signals in nonselected bands. Optical signals in the selected band are coupled from the other of the mirrors on the other end face of the resonant cavity to a branch line. In one preferred embodiment, the cavity is a finer optic resonant cavity and trunk line optical fibers are coupled directly to one of the mirrors of the cavity. Power is coupled from the input portion to the output portion of the trunk line by evanescent coupling. A second resonant cavity can couple power in the same or a different band to a second branch line. Optical pumping can be utilized at the filter tap for optical signal amplification. The filter tap can include a macro-optical resonant cavity and lenses for directing optical signals between optical fiber cores and the resonant cavity.

EP 0 260 654 A3

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EUROPEAN SEARCH REPORT

Application Number

EP 87 11 3473

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
D,A	WO-A-8 302 168 (POLAROID) * Abstract; figures 1-8 *	1-3,12-16,26-35,38-40	G 02 B 6/34 H 04 B 9/00 H 01 S 3/00
A	WO-A-8 602 171 (POLAROID) * Abstract; figures 1-12 *	1-3,6-16,26-40	
A	EP-A-0 189 196 (POLAROID) * Abstract; figures 1-3 *	1,26-28,31	
A	EP-A-0 139 081 (POLAROID) * Abstract; figures 1-9 *	1,26-28,31	
A	JOURNAL OF LIGHTWAVE TECHNOLOGY, vol. LT-2, no. 4, August 1984, pages 448-463, IEEE, New York, US; H. ISHIO et al.: "Review and status of wavelength-division-multiplexing technology and its application" * Figure 4 *	6,22,36,41	

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

G 02 B
H 01 S

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	31-10-1989	MALIC K.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P0401)